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**INFLUENCE OF SAFETY MANAGEMENT PRACTICES ON
SAFETY BEHAVIOUR AMONG EMPLOYEES IN
MANUFACTURING COMPANY IN KLANG VALLEY**

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**MASTER OF SCIENCE
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2020**

**INFLUENCE OF SAFETY MANAGEMENT PRACTICES ON SAFETY BEHAVIOUR
AMONG EMPLOYEES IN MANUFACTURING COMPANY IN KLANG VALLEY**

BY

DHINESH KUMAR



**Thesis submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in fulfillment of the requirement for Master of Science
(Occupational Health and Safety Management)**



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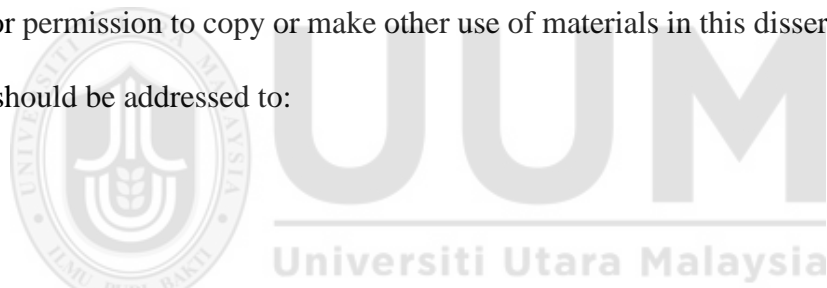
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ABSTRACT

The purpose of this study is to review the level of compliance to safety and participation among the safety workers in manufacturing company and to review the relationship between safety compliance and safety participation as dependent variable with independent variables which are safety management practices which look at management commitment, safety training, the involvement of the workers, safety communication, safety rules and procedures, promotion of safety, and policies and psychological contract of safety. The research method is quantitative analysis and adopting a cross-sectional approach in data gathering. Primary data generated from the questionnaire choose as a data collection. Random sampling method was used in collecting the data and the population is from the Mewah Oil manufacturing company in Klang and Semenyih. Quantitative analysis using SPSS version 25.0 was used and the result is shown that the validity and reliability of seven factors of safety management practices that may affect the safety behaviors (safety compliance and safety participation)

Keywords: management commitment, safety training, workers involvement, safety communication and feedback, safety rules and procedures, safety promotion policies, psychological contract of safety, safety compliance and safety participation

ABSTRAK

Tujuan kajian ini adalah untuk mengkaji tahap kepatuhan terhadap keselamatan dan penyertaan di kalangan pekerja keselamatan di syarikat perkilangan dan mengkaji hubungan antara kepatuhan keselamatan dan penyertaan keselamatan sebagai pemboleh ubah bersandar dengan pemboleh ubah bebas yang merupakan amalan pengurusan keselamatan yang melihat komitmen pengurusan , latihan keselamatan, penglibatan pekerja, komunikasi keselamatan, peraturan dan prosedur keselamatan, promosi keselamatan, dan polisi dan kontrak keselamatan psikologi. Kaedah kajian adalah analisis kuantitatif dan menggunakan pendekatan keratan rentas dalam pengumpulan data. Data primer yang dihasilkan membentuk soal selidik yang dipilih sebagai pengumpulan data. Kaedah pengambilan sampel secara rawak digunakan dalam mengumpulkan data dan populasi adalah dari syarikat pembuatan Minyak Mewah di Klang dan Semenyih. Analisis kuantitatif menggunakan SPSS versi 25.0 digunakan dan hasilnya menunjukkan bahawa kesahan dan kebolehpercayaan tujuh faktor amalan pengurusan keselamatan yang boleh mempengaruhi tingkah laku keselamatan (kepatuhan keselamatan dan penyertaan keselamatan)

Kata kunci: komitmen pengurusan, latihan keselamatan, penyertaan pekerja, komunikasi keselamatan dan maklum balas, peraturan dan prosedur keselamatan, dasar promosi keselamatan, kontrak keselamatan psikologi, pematuhan keselamatan dan penyertaan keselamatan.

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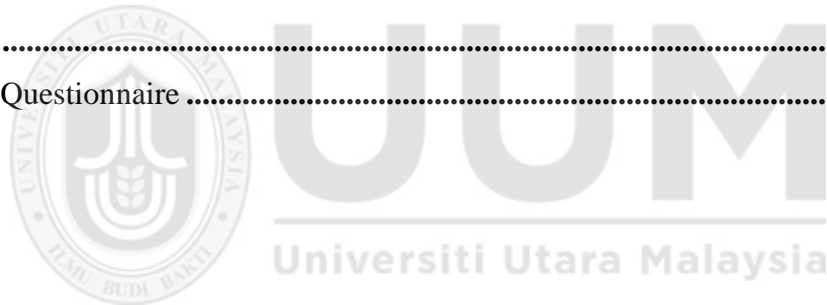
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LIST OF ABBREVIATIONS

OSH	Occupational Safety and Health
ILO	International Labour Organization OSHA
1994	Occupational Safety and Health Act 1994
SOCSSO	Social Security Organization
S.O.P	Safe Operating Procedure
FMA 1967	Factories and Machinery Act 1967
PPE	Personal Protective Equipment
SPSS	Statistical Package for The Social Science
JSA	Job Safety Analysis



CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Occupational health and safety (OSH) aspect in most organizations is in place for the improvement of productivity and efficiency. However, on a negative note, it has resulted in an increasing number of occupational injuries (OHS, 2010). Occupational accidents can be defined as an event that happens from the carrying out of an occupation, which can lead to injuries, whether fatal or otherwise (Papazoglou, Aneziris, Konstandinidou, & Giakoumatos, 2009). These incidents are unpredictable and unintended. It can lead to injuries, diseases, or even death (Visser, 2007).

A hazard can be defined as a potential source of harm, or something that would have a negative impact on an individual or a person's health. In 1994, the Malaysian government introduced a regulation - Occupational Safety and Health Act (OSHA 1994) - for employers, employees and self-employed personnel to help safeguard their health and safety at the workplace. This basically ensured that the respective industries identify hazards, conduct risk assessments and control high risk areas.

REFERENCES

- Abdullah, N. C., Spickett, J. T., Rumchev, K. B., & Dhaliwal, S. S. (2009). Assessing employees perception on health and safety management in public hospitals. *International Review of Business Research Papers*, 5(4), 54-72.
- ACSNI, 1993. Organising for Safety. Advisory Committee on the Safety of Nuclear Installations. Human Factors Study Group, Third Report. HSE Books, Suffolk.
- Ajzen, I. (1989). Attitude structure and behaviour. In A.R. Pratkanis, S.J. Breckler, & A.G. Greenwald (Eds.), *Attitude, structure and function* (pp. 11–39). Hillsdale, NJ, USA: Erlbaum.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*, 50, 1–33.
- Ajzen, I., & Madden, T.J. (1986). Prediction of goal-directed behaviour. The role of intention, perceived control and prior behaviour. *Journal of Experimental Social Psychology*, 22, 453–474.
- Albarracin, D., & Wyer, R.S. (2000). The cognitive impact of past behaviour: Influence on beliefs, attitudes, and future behavioural decisions. *Journal of Personality and Social Psychology*, 79, 5–22.

Ashcraft, M.H., & Kirk, E.P. (2001). “The relationships among working memory, math anxiety, and performance”, *Journal of Experimental Psychology: General*, 130, 224-237.

Baker, S. P., O’Neill, B., Ginsburg, M. J., & Li, G. (1992). *The injury fact book*. London: Oxford University Press.

Barbaranelli, C.; Petitta, L.; Probst, T.M. Does safety climate predict safety performance in Italy and the USA? Cross-cultural validation of a theoretical model of safety climate. *Accid. Anal. Prev.* **2015**, 77, 35–44.

Barbaranelli, C.; Petitta, L.; Probst, T.M. Does safety climate predict safety performance in Italy and the USA? Cross-cultural validation of a theoretical model of safety climate. *Accid. Anal. Prev.* 2015, 77, 35–44.

Hon, C.K.H.; Chan, A.P.C.; Yam, M.C.H. Determining safety climate factors in the repair, maintenance, minor alteration, and addition sector of Hong Kong. *J. Constr. Eng. Manag.* 2013, 139, 519–528.

Barling, J., & Hutchinson, I. (2000). Commitment versus control-oriented safety practices, safety reputation, and perceived safety climate. *Canadian Journal of Administrative Sciences*, 17, 76–84.

Barling, J., Hutchinson, I., 2000. Commitment vs. control-based safety practices, safety reputation, and perceived safety climate. *Can. J. Admin. Sci.* 17, 76–84.

Barling, J., & Boswell, R. (1995). Work performance and achievement-striving and impatience variability dimension of Type a behaviors. *Applied Psychology: An International Review*, 44(2), 143-153.

Barling, J., Loughlin, C., Kelloway, E.K., 2002. Development and test of a model linking safety-specific transformational leadership and occupational safety. *J. Appl. Psychol.* 87, 488–496.

Brewer, B. 2006. “Relationships among Teams, Culture, Safety, and Cost Outcomes.” *Western Journal of Nursing Research* 28 (6): 641–53.

Bosma, H., Stansfeld, S.A. & Marmot, M.G. (1998). "Job control, personal characteristics and heart disease", *Journal of occupational Health Psychology* 3,402-409.

Brewer, N. T., Chapman, G. B., Gibbons, F. X., Gerrard, M., McCaul, K. D., & Weinstein, N. D. (2007). Meta-analysis of the relationships between the two risk perception and health behavior: The example of vaccination. *Health Psychology*, 26, 136-145.

Burke, M.J., Chan-Serafin, S., Salvador, R., Smith, A., & Sarpy, S.A. (2008). The role of National culture and organizational climate in safety training effectiveness. *European Journal of Work and Organizational Psychology*, 17, 133-152.

Burke, M.J., Sarpy, S.A., Smith-Crowe, K., Chan-Serafin, S., Salvador, R.O. and Islam, G. (2006) Relative effectiveness of worker health and safety training methods. *American Journal of Public Health*, 96(2), 315–24.

Cabrera, D.D. (1998). Safety climate and attitude. In A. Hale & M. Baram (Eds.), *Safety management and the challenge of organizational change* (pp. 93–105). Oxford, UK: Elsevier.

Calpan RS, Cobb S, French JRP, Harrison RV & Pinneau SR. (1975). *Job Demands and Worker Health*. NIOSH Research Report

Canter, D. and Olearnik, H. 'Total Safety: A Strategy for Zero Accidents at British Steel Teeside Works', University of Surrey, Guildford, 1989

Canter, D. and Donald, I. in 'Proceedings of Culture Space History. 11th International Conference of the International Association for the Study of People and their Physical Settings', Ankara, Turkey, %12 July 1990, Faculty of Architecture Press, Middle East Technical University, Ankara, Turkey

Choudhry, R.M.; Fang, D.P.; Lingard, H. Measuring safety climate of a construction company. *J. Constr. Eng.Manag.* 2009, 135, 890–899

Christian, M.S.; Bradley, J.C.; Wallace, J.C.; Burke, M.J. Workplace safety: A meta-analysis of the roles of person and situation factors. *J. Appl. Psychol.* **2009**, 94,

Clarke, S. 2006. “The Relationships between the two Safety Climate and Safety Performance: A Meta-Analytic Review.” *Journal of Occupational Health Psychology* 11 (4): 315–27

Clarke, S. 2006. “The Relationships between the two Safety Climate and Safety Performance: A Meta-Analytic Review.” *Journal of Occupational Health Psychology* 11 (4): 315–27.

Clarke, S., J. Rockett, D. Sloane, and L. Aiken. 2002. “Organizational Climate, Staffing, and Safety Equipment as Predictors of Needlestick Injuries and Near-Misses in Hospital Nurses.” *American Journal of Infection Control* 30 (4): 207–16.

Cohen, A., Smith, M., & Cohen, H. H. (1975). *Safety programme practices in high vs. low accident rate companies*. Cincinnati: Occupational Safety and Health

Cortina, J. M. (1993). What is Coefficient Alpha? An Examination of Theory and Applications. *Journal of Applied Psychology*. 78, 98–104.

Cox, S., & Cox, T. (1991). The structure of employee attitudes to safety: A European example. *Work & Stress*, 5, 93-106

Cox, S. and Cox, T. (1991) the structure of employee attitudes to safety: a European example. *Work and Stress* 5(2), 93-106

DeArmond, S.; Smith, A.E.; Wilson, C.L.; Chen, P.Y.; Cigularov, K.P. Individual safety performance in the construction industry: Development and validation of two short scales. *Accid. Anal. Prev.* **2011**, *43*, 948–954.

Dension, D. R. (1996). What is the difference between the two organizational culture and organisational climate. Anative's point of view on a decade of paradigm wars. *Academy of Management Review*, *21*, 619-654.

Diaz, R. I., & Diaz-Cabrera, D. (1997). Safety climate and attitude as evaluation measures of organizational safety. *Accident Analysis and Prevention*, *29*, 643–650.

DeVellis, R.F. (1991) *Scale Development. Theory and Applications*. Sage, Newbury Park.

Donald, I. (1994). Measuring psychological factors in safety. *The Safety and Health Practitioner*, *12*(3), 26–29.

E. A. L., Ling, F. Y. Y., & Chong, A. F. W. (2005). Framework for project managers to manage construction safety. *International Journal of Project Management*, *23*(4), 329-341.

Glendon, A. I., & Litherland, D. K. (2001). Safety climate factors, group differences and safety behavior in road construction. *Safety Science*, *39*(3), 157-188.

Cheng, E. W. L., Ryan, N., & Kelly, S. (2015). Exploring the perceived influence of safety management practices on project performance in the construction industry. *Safety Science*, *50*, 363-369.

Goldenhar, L., Williams, L., & Swanson, N. (2003). Modelling the relationships between the two job stressors and injury and near-miss outcomes for construction labourers. *Work & Stress*, *17*(3), 218-240.

Griffin, M.A., Neal, A., 2000. Perceptions of safety at work: a framework for linking safety climate to safety performance, knowledge, and motivation. *J. Occup. Health Psychol.* *5* (3), 347–358

Guastello, S.J., 1989. Catastrophe modeling of the accident process: evaluation of an accident reduction program using the Occupational Hazards Survey. *Accid. Anal. Prev.* 21, 61–77.

Guastello, S.J., 1991. Psychosocial variables related to transit accidents: a catastrophe model. *Work Stress* 5, 17–28

Guldenmund, F.W. (2000). The nature of safety culture: A review of theory and research. *Safety Science*, 34, 215– 257.

Guo, B.; Yiu, T.; González, V. Predicting safety behavior in the construction industry: Development and test of an integrative model. *Saf. Sci.* **2016**, 84, 1–11.

Hellemans, C., & Laphorn, B. (2016). Antecedents of work ability in the cleaning sector. *International Journal of Workplace Health Management*, 9(3), 328-339.

Hinze, J.; Thurman, S.; Wehle, A. Leading indicators of construction safety performance. *Saf. Sci.* **2013**, 51, 23–28.

Hofmann, D. A., Jacobs, R. R., & Landy, F. (1995). High reliability process industries: Individual, micro, and macro organizational influences on safety influences on safety performance. *Journal of Safety Research*, 26(3), 131-149

Hoffmann, D.A., Stetzer, A., 1996. A cross-level investigation of factors influencing unsafe behaviors and accidents. *Personnel Psychol.* 49, 307–339.

Hoffmann, D.A., Stetzer, A., 1998. The role of safety climate and communication in accident interpretation: implications for learning from negative events. *Acad. Manage. J.* 41, 644–657.

Hon, C.K.H.; Chan, A.P.C.; Yam, M.C.H. Relationships between the two safety climate and safety performance

of building repair, maintenance, minor alteration, and addition (RMAA) works. *Saf. Sci.* **2014**, *65*, 10–19.

Janssen, P.P.M., Bakker, A.B., de Jong, A., 2001. A test and refinement of the Demand–Control–Support Model in the construction industry. *Int. J. Stress Manage.* *8*, 315–332

Kitapci, H., & Sezen, B. (2007). The effects of participation in decision making, individual improvement efforts and training on the quality of the product design process production planning and control. *Journal of Occupational Health Psychology*, *18*(1), 3-8.

Krausman, A.S., Crowell, H.P., & Wilson, R.M. (2002). “The effects of physical exertion on cognitive performance (Report No. ARL-TR-2844)”, Aberdeen Proving Ground, MD: Army Research Laboratory Department of Health (1993) *the Health Survey for England*, London: DFH

Kumar, A., Jain N. K., & Patel, P. (2015). Analysis of safety performance rating in thermal power plant. *International Journal of Emerging Technology and Advanced Engineering*, *5*(1), 120-128.

Larson, M. G. (2006). Descriptive statistics and graphical displays. *Circulation*, *114*(1), 76-81.

Levine, D. I., & Toffel, M. W. (2010). Quality Management and Job Quality: How the ISO 9001 Standard for Quality Management Systems Affects Employees and Employers. *Management Science*, *56*(6)

Lutness, J. (1987, February). Measuring up: Assessing safety with climate surveys. *Occupational Health and Safety*, *56*(2), 20-26.

Maurer, T.J., & Tarulli, B.A. (1994). Investigation of perceived environment, perceived outcome, and person variables in relationships to voluntary development activity by employees. *Journal of Applied Psychology*, *79*, 3–14.

Neal, A.; Griffin, M.A. A study of the lagged relationships among safety climate, safety motivation, safety behavior, and accidents at the individual and group levels. *J. Appl. Psychol.* **2006**, *91*, 946–953

Neal, M. A. Griffin, and P. M. Hart, “The impact of organizational climate on safety climate and individual behavior,” *Safety Science*, vol. 34, pp. 99-109, 2000.

Neal, A., Griffin, M.A., Hart, P.M., 2000. The impact of organizational climate on safety climate and individual behavior. *Saf. Sci.* 34 (1–3), 99–109.

Sekaran, Umar (2003). *Research methods for business: A skill building approach*. (4th ed.) USA: John Wiley & Sons, Inc

Niskanen, T. (1994) Safety climate in the road administration. *Safety Science* 17, 237-255.
Seppala, A. (1992) Evaluation of safety measures, their improvement and connections to occupational accidents. Cited in Niskanen, T., 1994. Safety climate in the road administration. *Safety Science* 17, 237-255.

Noe, R.A., & Wilk, S.A. (1993). Investigation to the factor that influence employees' participation in development activities. *Journal of Applied Psychology*, 78, 119–133

O. L. Siu, D. R. Phillip, and T. W. Leung, “Safety climate and safety performance among construction workers in Hong Kong the role of psychological strains as mediators,” *Accident analysis and prevention* vol. 36, pp. 359-366, 2004.

Osipow, S.H. & Spokane, A.R. (1987). “Occupational Stress Inventory Manual (research version) Odessa, FL: Psychological Assessment Resources.

Osipow, S.H. (1998). “Occupational Stress Inventory Manual (Professional version) Odessa, FL: Psychological Assessment Resources

Pareek, U. (1983). "Organisational Role Stress Scale", ORS Scale Booklet, Answer Sheet and Manual. Ahmedabad: Navin Publications

Poulston, J. (2008). Hospitality workplace problems and poor training: A close relationships . *International Journal of Contemporary Hospitality Management*, 20(4), 412-427.

Probst, T.M., Brubaker, T.L., 2001. The effects of job insecurity on employee safety outcomes: crosssectional and longitudinal explorations. *J. Occup. Health Psychol.* 6, 139–159.

Reader, T.; Noort, M.; Shorrock, S.; Kirwan, B. Safety sans frontières: An international safety culture model. *Risk Anal.* 2015, 35, 770–789

Steve, Williams, (2011), managing workplace stress: a best practice blueprint, Volume 1 of Fast track series, Publisher Wiley, Original from Cornell University, 78-84

Tannembaum, S.I., Mathieu, J.E., Salas, E., & Cannon-Bowers, J. (1991). Meeting trainees' expectations: The influence of training fulfillment on the development of commitment, self-efficacy and motivation. *Journal of Applied Psychology*, 76, 759–769.

Taylor, R. (1990). Interpretation of the correlationships coefficient: a basic review. *Journal of diagnostic medical sonography*, 6(1), 35-39.

T.C. Wu, C.H Chen, C.C Li., "A correlationships among safety leadership, safety climate and safety performance," *Journal of Loss Prevention in the Process Industries* 21 307–318. 2008

Thompson, C. A., Beauvais, L. L., & Lyness, K. S. (1999). When work–family benefits are not enough: The influence of work–family culture on benefit utilization, organizational attachment, and work–family conflict. *Journal of Vocational Behavior*, 54, 392–415.

Weinstein, N. D. (2000). Perceived probability, perceived severity, and health-protective behavior. *Health Psychology*, 19, 65-74.

Wilkins, J.R. (2011) Construction workers' perceptions of health and safety training programmes. *Construction Management and Economics*, 29(10), 1017–26.

Wu, C.; Song, X.; Wang, T.; Fang, D.P. Core Projection of the Construction Safety Climate for a Standardized Safety-Climate Measurement. *J. Constr. Eng. Manag.* 2015, 141, 1–12

Wu, C.; Song, X.; Wang, T.; Fang, D.P. Core Projection of the Construction Safety Climate for a Standardized Safety-Climate Measurement. *J. Constr. Eng. Manag.* 2015, 141, 1–12.

Zohar, D. (1980a). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology*, 65, 96-102.

Zohar, D. (1980b). Promoting the use of protective gear by behavioral modification techniques. *Journal of Safety Research*, 12, 78-85.

Zohar, D. (1980). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology*, 65, 96– 102.

APPENDIX A: Questionnaire



Date : 26 / 09 / 2019

Dear Respondent,

I am a Postgraduate student in Universiti Utara Malaysia and carrying out a survey regarding safety behaviour, in order to fulfil the degree of Master requirement of Universiti Utara Malaysia. The objective of this research is to determine the relationship between safety management practices with safety behaviour.

Attached alongside this letter is a short questionnaire that addresses the element of safety management practices in your organisation alongside your safety uncertainty and safety behaviour as an employee in the same organisation. I realize that your time is priceless and very precious; however, your involvement in this survey, which will need only 10 - 15 minutes of your time, will contribute to the success of this study.

There is no right or wrong answer to the statements listed in the questionnaire. Your sincerity and honesty is highly required in answering these statements. Please be rest assured that all your responses will be kept confidential and will be strictly used for the academic research purposes only. With this I highly appreciate your cooperation and participation in this study and wish to convey my thanks in advance.

If you are interested in this study and it's outcome, please contact me via email at dhinessh04@gmail.com or call me at 0176105066.

Thank you for your time and attention

Yours sincerely,

Dhinessh Kumar

Tuan/Puan,

Saya adalah pelajar Sarjana dari Universiti Utara Malaysia yang sedang menjalankan satu kajian mengenai tingkah laku keselamatan, untuk memenuhi pra-syarat Sarjana dari Universiti Utara Malaysia. Objektif kajian ini adalah untuk menentukan hubungan antara amalan pengurusan keselamatan dengan tingkah laku keselamatan. Soal selidik yang disertakan bersama-sama dengan surat ini merangkumi elemen pengurusan keselamatan di dalam organisasi anda serta ketidakpastian mengenai keselamatan dan tingkahlaku keselamatan anda sebagai pekerja di dalam organisasi. Saya sedar bahawa masa anda sangat berharga dan bermakna; walau bagaimanapun, penglibatan anda selama 10 - 15 minit bagi menjawab soal selidik ini, akan menyumbang kepada kejayaan kajian ini.

Tidak ada jawapan yang betul atau salah dalam soal selidik ini. Hanya keikhlasan dan kejujuran anda diperlukan dalam menjawab soalan. Untuk makluman, semua maklumbalas anda akan dirahsiakan dan hanya digunakan bagi tujuan penyelidikan akademik sahaja.

Dengan ini saya sangat menghargai kerjasama dan penglibatan anda dalam kajian ini dan saya dahului dengan ucapan terima kasih.

Jika anda berminat dengan kajian ini dan dapattannya, sila hubungi saya melalui e-mel dhinessh04@gmail.com atau menghubungi saya di talian 0176105066.

Terima kasih atas kerjasama dan perhatian anda.

Yang Benar;

Dhinessh Kumar

SECTION A: DEMOGRAPHIC INFORMATION

BAHAGIAN A: MAKLUMAT DEMOGRAFI

Please fill in blank and tick (v) in the appropriate boxes that corresponds to your answer to each of the following questions below.

Sila isikan tempat kosong dan tandakan (v) untuk mewakili jawapan anda pada semua soalan di bawah.

1. Job title/ *Jawatan* : _____
2. Gender/ *Jantina* : ☐ Male/ *Lelaki* ☐ Female/ *Perempuan*
3. Age/ *Umur* : _____ years/ *tahun*
4. How long have you been working?/ *Sudah berapa lama anda bekerja?* : _____ years/ *tahun*
5. How long have you been working with the present organisation?/
Sudah berapa lama anda bekerja dengan organisasi sekarang? : _____ years/ *tahun*
6. Highest Educational level/ *Tahap pendidikan tertinggi* :

<input type="checkbox"/> Secondary school/ <i>Sekolah Menengah</i>	<input type="checkbox"/> Diploma/ <i>Diploma</i>
<input type="checkbox"/> Certificate/ <i>Sijil</i>	<input type="checkbox"/> Degree/ <i>Ijazah</i>
<input type="checkbox"/> Master above/ <i>Master ke atas</i>	<input type="checkbox"/> Others/ <i>Lain-lain</i> :
7. Marital status/ *Status perkahwinan* :

<input type="checkbox"/> Married/ <i>Berkahwin</i>	<input type="checkbox"/> Single/ <i>Bujang</i>	<input type="checkbox"/> Divorced/ <i>Berceraai</i>
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8. Have you ever had any occupational accident ever since you started working in this organisation/
Adakah anda pernah mengalami kemalangan di tempat kerja sepanjang bekerja di organisasi ini?

<input type="checkbox"/> Yes/ <i>Ya</i>	<input type="checkbox"/> No/ <i>Tidak</i>
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9. If yes, how many accidents have you had while working in this organisation?/
Jika ya, berapakah bilangan kemalangan yang pernah dialami sepanjang bekerja di organisasi ini?

<input type="checkbox"/> 1 - 3	<input type="checkbox"/> 4 - 8
<input type="checkbox"/> 9 - 15	<input type="checkbox"/> Over 15
10. Have you attended any occupational safety training?
Pernahkah anda pernah menghadiri latihan keselamatan?

<input type="checkbox"/> Yes/ <i>Ya</i>	<input type="checkbox"/> No/ <i>Tidak</i>
---	---
11. How often do you have to attend safety training?
Berapa kekerapan latihan keselamatan yang anda perlu hadiri?
☐

- ☐ Every month/ *Setiap bulan* Once in three month/ *Sekali dalam tempoh tiga bulan*
☐ Once in six month/ *Sekali dalam tempoh enam bulan* ☐ Once a year/ *Sekali setahun*
☐ Not at all/ *Tiada langsung*

SECTION B: SAFETY MANAGEMENT PRACTICES

BAHAGIAN B: AMALAN PENGURUSAN KESELAMATAN

Considering only your perception, please circle the most appropriate answer to you based on the scale below:

Dengan hanya mengambil kira pandangan anda, bulatkan jawapan yang paling tepat kepada anda berpanduan pada skala jawapan di bawah:

1	2	3	4	5
Strongly Disagree <i>Sangat Tidak Setuju</i>	Disagree <i>Tidak Setuju</i>	Moderate <i>Moderasi</i>	Agree <i>Setuju</i>	Strongly Agree <i>Sangat Setuju</i>

Question		Answer				
1	Safety is given high priority by the management. <i>Keselamatan diberikan keutamaan oleh pihak pengurusan.</i>	1	2	3	4	5
2	Safety rules and procedures are strictly followed by the management. <i>Peraturan dan prosedur keselamatan dipatuhi oleh pihak pengurusan.</i>	1	2	3	4	5
3	Corrective action is always taken when the management is told about unsafe practices. <i>Pihak pengurusan selalu akan membuat tindakan pembetulan jika dimaklumkan mengenai amalan tidak selamat.</i>	1	2	3	4	5
4	In my workplace manager or supervisors do not show interest in the safety of workers. <i>Pengurus atau penyelia di tempat kerja ini tidak menunjukkan minat terhadap keselamatan pekerja.</i>	1	2	3	4	5
5	Management considers safety to be equally important as production. <i>Pihak pengurusan mementingkan keselamatan sama seperti pengeluaran hasil.</i>	1	2	3	4	5
6	Members of the management do not attend safety meetings. <i>Ahli pihak pengurusan tidak menghadiri mesyuarat keselamatan.</i>	1	2	3	4	5
7	I feel that management is willing to compromise on safety for increasing production. <i>Saya merasakan pihak pengurusan sanggup mengabaikan aspek keselamatan demi meningkatkan pengeluaran hasil.</i>	1	2	3	4	5
8	When near-miss accidents are reported, my management acts quickly to solve the problems. <i>Pihak pengurusan bertindak pantas untuk menyelesaikan masalah berpunca dari kejadian hampir kemalangan yang telah dilaporkan.</i>	1	2	3	4	5
9		1	2	3	4	5

	Question	Answer				
	My company provides sufficient personal protective equipment for the workers. <i>Pihak pengurusan menyediakan peralatan perlindungan keselamatan secukupnya untuk para pekerja.</i>					
10	My company gives comprehensive training to the employees in workplace health and safety issues. <i>Pihak pengurusan memberi latihan kesihatan dan keselamatan yang komprehensif untuk pekerja di tempat kerja.</i>	1	2	3	4	5
11	Safety issues are given high priority in training programmes. <i>Isu keselamatan diberikan keutamaan dalam program-program latihan</i>	1	2	3	4	5
12	I am not adequately trained to respond to emergency situations in my workplace. <i>Saya tidak diberikan latihan secukupnya untuk bertindak balas terhadap situasi kecemasan di tempat kerja</i>	1	2	3	4	5
13	Management encourages the workers to attend safety training programmes. <i>Pihak pengurusan menggalakkan pekerja untuk menyertai latihan-latihan keselamatan.</i>	1	2	3	4	5
14	Safety training given to me is adequate to enable to me to assess hazards in workplace. <i>Latihan keselamatan yang diberikan kepada saya adalah mencukupi untuk membolehkan saya menilai bahaya/hazad di tempat kerja.</i>	1	2	3	4	5
15	Management always welcomes opinion from employees before making final decisions on safety related matters. <i>Pihak pengurusan sentiasa mengalu-alukan pendapat pekerja sebelum membuat keputusan akhir mengenai hal-hal berkaitan keselamatan.</i>	1	2	3	4	5
16	My company has safety committees consisting of representatives of management and employees. <i>Jawatankuasa keselamatan di syarikat saya terdiri daripada wakil pihak pengurusan dan wakil pihak pekerja.</i>	1	2	3	4	5
17	Management promotes employees involvement in safety related matters. <i>Pihak pengurusan menggalakkan penglibatan pekerja dalam hal-hal keselamatan.</i>	1	2	3	4	5
18	Management consults with employees regularly about workplace health and safety issues. <i>Pihak pengurusan sering merujuk kepada pekerja mengenai isu kesihatan dan keselamatan di tempat kerja.</i>	1	2	3	4	5
19	Employees do not sincerely participate in identifying safety problems. <i>Pekerja tidak ikhlas dalam melibatkan diri untuk mengenalpasti masalah keselamatan.</i>	1	2	3	4	5

Question		Answer				
20	My company doesn't have a hazard reporting system where employees can communicate hazard information before incidents occur. <i>Syarikat saya tidak mempunyai sistem laporan bahaya/hazad untuk membolehkan pekerja menyampaikan maklumat punca kemalangan sebelum ia berlaku.</i>	1	2	3	4	5
21	Management operates an open door policy on safety issues. <i>Pengurusan mengamalkan dasar keterbukaan mengenai isu-isu keselamatan.</i>	1	2	3	4	5
22	There is sufficient opportunity to discuss and deal with safety issues in meetings. <i>Terdapat peluang yang secukupnya bagi membincangkan dan menangani isu-isu keselamatan dalam mesyuarat.</i>	1	2	3	4	5
23	The target and goals for safety performance in my organization are not clear to the workers. <i>Sasaran dan matlamat prestasi keselamatan di organisasi ini adalah tidak jelas kepada para pekerja.</i>	1	2	3	4	5
24	There is open communications about safety issues in this workplace. <i>Terdapat komunikasi terbuka mengenai isu keselamatan di tempat kerja.</i>	1	2	3	4	5
25	The safety rules and procedures followed in my company are sufficient to prevent incidents occurring. <i>Peraturan dan prosedur keselamatan di organisasi ini adalah cukup untuk mencegah berlakunya kemalangan.</i>	1	2	3	4	5
26	The facilities in the safety department are not adequate to meet the needs of my organization. <i>Fasiliti di jabatan keselamatan tidak mencukupi untuk memenuhi keperluan organisasi.</i>	1	2	3	4	5
27	My supervisors and managers always try to enforce safe working procedures. <i>Penyelia dan pengurus saya sentiasa cuba untuk menguatkuasakan prosedur kerja yang selamat.</i>	1	2	3	4	5
28	Safety inspections are carried out regularly. <i>Pemeriksaan keselamatan kerap dijalankan.</i>	1	2	3	4	5
29	The safety procedures and practices in this organization are useful and effective. <i>Prosedur dan amalan keselamatan dalam organisasi ini adalah berguna dan berkesan.</i>	1	2	3	4	5
30	In my company safe conduct is considered as a positive factor for job promotions. <i>Dalam syarikat ini, amalan keselamatan adalah faktor positif yang boleh menyumbang kepada kenaikan pangkat.</i>	1	2	3	4	5

Question		Answer				
31	In my company employees are rewarded for reporting safety hazards (thanked, cash or other rewards, recognition in newsletter, etc.). <i>Dalam syarikat ini, pekerja diberikan ganjaran kerana melaporkan bahaya/hazad keselamatan (ucapan terima kasih, imbuhan wang atau penghargaan dalam bulletin, dll)</i>	1	2	3	4	5
32	In my company safety week celebration and other safety promotional activities arranged by the management are very effective in creating safety awareness among the workers. <i>Dalam syarikat ini, minggu keselamatan dan lain-lain aktiviti promosi keselamatan yang dianjurkan oleh pihak pengurusan adalah berkesan untuk mewujudkan kesedaran keselamatan di tempat kerja.</i>	1	2	3	4	5
33	There exists very healthy competition among the employees to find out and report unsafe condition and acts. <i>Wujud persaingan yang sihat dalam kalangan pekerja untuk melaporkan keadaan dan tingkahlaku yang tidak selamat.</i>	1	2	3	4	5
34	Our supervisor becomes very unhappy and angry when employees find out and report unsafe conditions and acts in our department. <i>Penyelia kami tidak suka dan marah jika pekerja mendapat tahu dan melaporkan keadaan dan tingkahlaku tidak selamat yang berlaku di bahagian kami.</i>	1	2	3	4	5

SECTION C: PSYCHOLOGICAL CONTRACT OF SAFETY

1.	My employer meets their obligation to involve employees in safety decision making. <i>Majikan saya memenuhi tanggungjawab dengan melibatkan pekerja dalam sebarang keputusan mengenai isu keselamatan.</i>	1	2	3	4	5
2.	My employer meets their obligation to listen employee safety concerns. <i>Majikan saya memenuhi tanggungjawab dengan mendengar isu-isu keselamatan pekerja.</i>	1	2	3	4	5
3.	My employer meets their obligation to inform employees about the outcome of safety meetings. <i>Majikan saya memenuhi tanggungjawab dengan memaklumkan pekerja mengenai hasil mesyuarat keselamatan.</i>	1	2	3	4	5
4.	My employer meets their obligation to carry out safety investigations to prevent accidents happening again. <i>Majikan saya memenuhi tanggungjawab dengan menjalankan siasatan keselamatan bagi mengelakkan kemalangan daripada berulang.</i>	1	2	3	4	5
5.	My employer meets their obligation to set a good example for safety behaviour. <i>Majikan saya memenuhi tanggungjawab dengan menunjukkan contoh yang baik dalam tingkahlaku selamat di tempat kerja.</i>	1	2	3	4	5

Question		Answer				
6.	My employer meets their obligation to ensure that safety documentation details safety procedures. <i>Majikan saya memenuhi tanggungjawab dengan memastikan bahawa dokumentasi keselamatan memperincikan tatacara keselamatan.</i>	1	2	3	4	5
7.	My employer meets their obligation to conduct regular safety training with all employees. <i>Majikan saya memenuhi tanggungjawab dengan mengadakan latihan keselamatan berkala dengan semua pekerja.</i>	1	2	3	4	5
8.	My employer meets their obligation to keep work equipment functioning properly. <i>Majikan saya memenuhi tanggungjawab untuk memastikan peralatan kerja sentiasa berfungsi dengan baik.</i>	1	2	3	4	5
9.	My employer meets their obligation to supply proper work equipment. <i>Majikan saya memenuhi tanggungjawab membekalkan peralatan kerja yang baik.</i>	1	2	3	4	5
10.	My employer meets their obligation to provide training in the safe use of equipment. <i>Majikan saya memenuhi tanggungjawab dengan memberi latihan tentang penggunaan peralatan kerja dengan selamat.</i>	1	2	3	4	5
11.	My employer meets their obligation to maintain a safe workplace for the employees. <i>Majikan saya memenuhi tanggungjawab untuk mengekalkan tempat kerja yang selamat untuk para pekerja.</i>	1	2	3	4	5

Section D

No.	Statements/Pernyataan					
1	I carry out work in a safe manner. <i>Saya melaksanakan kerja saya dengan cara yang selamat.</i>	1	2	3	4	5
2	I use all necessary safety equipment to do my job. <i>Saya menggunakan semua peralatan keselamatan yang sesuai untuk melakukan kerja saya.</i>	1	2	3	4	5
3	I use the correct safety procedures for carrying out my job. <i>Saya menggunakan prosedur keselamatan yang betul ketika menjalankan kerja saya.</i>	1	2	3	4	5
4	I ensure highest level of safety when I carry out my job. <i>Saya memastikan tahap keselamatan paling tinggi apabila saya melaksanakan tugas saya.</i>	1	2	3	4	5
5	I put in extra effort to improve the safety of workplace. <i>Saya membuat usaha tambahan untuk membaiki keselamatan di tempat kerja.</i>	1	2	3	4	5
6	I help my co-workers when they are working under risky or hazardous conditions. <i>Saya membantu rakan-rakan sekerja ketika mereka melakukan tugas yang berisiko atau merbahaya.</i>	1	2	3	4	5
7	I voluntarily carry out tasks or activities that help improve work place safety. <i>Saya membantu menjalankan tugas atau aktiviti-aktiviti untuk membaiki keselamatan di tempat kerja secara sukarela.</i>	1	2	3	4	5